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12. (Amended) The method according to claim 10, the setting of the first black level comprising detecting an illuminance around a video camera that outputs the analog image signal.

REMARKS

Summary

Claims 1-16 were pending. In the Final Office action the Examiner rejected Claims 1-16. The Applicants have amended Claims 1 and 5-12. Claims 1-16 remain pending. No new matter has been introduced. The Applicant has carefully considered the Examiner's reasons for rejection of the claims, and the amendments made are directed towards further clarifying the subject invention. Although the claims as existed prior to this amendment adequately describe the invention when read in conjunction with the specification, the restatement of the claims in this amendment is believed to be more readable, and in conjunction with the remarks below demonstrates the patentable distinctions over the references cited. The Examiner is respectfully requested to consider the claim amendments on their merits and the accompanying remarks with a view to withdrawing the finality of the rejection and allowing the subject matter as now claimed.

Rejection of Claims

Claims 1-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sato et al. (US 6,249,362; "Sato") in view of Tsujihara et al. (US 5,504,528; "Tsujihara").

Rejections under 35 U.S.C. § 103(a)

As recited in Applicants' amended Claim 1, the screen is capable of displaying an image area and a blank area, the first black level of the image area being independent of the second black level of the blank area. Neither Sato nor Tsujihara describe a device where there are two distinct display areas, an image area and a blank area, with the

black level of each one being separately set, and where the black level of the image data to be displayed in the image area is responsive to a control operation.

The arrangement of amended Claim 1 comprises of a display screen capable of displaying an image area and a blank area which are perceived simultaneously by the viewer. The image data is generated by A/D converting an analog voltage representing the image, and having "a black level setting mechanism to set a first black level of the digital image data....", while a blank data generator generates the blank data which has "a second black level of the blank data being independent of the first black level of the digital image data" Sato and Tsujihara each have mechanisms to set a single black level, but they do not teach or suggest that a single display can have two separate black levels which are independent of each other.

As in many display technologies there is the provision of time intervals, where data is not intended to be displayed on the screen. In technologies such as electron beam cathode ray tubes, this interval is used, *inter alia*, to permit the retrace or flyback of the beam to the position to start a new scan line or frame. In many conventional designs this period is used to provide supervisory and control signals that affect the displayed data for the screen as a whole. This is the use of the "blanking period" as recited by Tsujihara (column 13, line 39). Such information as the "brightness reference signal" BRT, which is added in the vertical blanking period (Tsujihara, Fig 2 (a,c)) is not actually seen on the screen and does not correspond to any area thereof. The effect of control signals such as BRT is on the whole of the display. The references cited by the Examiner are thus entirely different from the arrangement of Claim 1 in which the "blank data" 1) pertains only to the corresponding "blank area", 2) establishes the black level thereof ("the second black level") and 3) is different from the "black level setting mechanism" that controls the black level ("the first black level") of the image data area "by adjusting a lower-limit reference voltage of the A/D converter", the image data corresponding to the "image area" of the display.

The black level characteristics of each area of the display in the arrangement of Claims 1 and 10 are separately and independently controlled. This is not taught or suggested by the cited references, and therefore a *prima facie* case of obviousness cannot be made.

Claims 2-4 and 11-13 as are patentable as claims dependent on a patentable independent claim. However, they are also independently patentable as discussed below.

Claim 2 recites a variable resistor as control of the black level of the image data. The term variable resistor customarily means a resistance whose value can be controlled by some external intervention such as a person turning the knob of a potentiometer, although digitally settable devices are also known. However once the resistance is set, it is intended to remain constant until there is once more an intervention. Tsujihara teaches a variable gain amplifier used in a feedback control circuit (column 7, line 66 to column 8, line 9). The gain of the amplifier is therefore dynamically controlled as part of a feedback control circuit. In the arrangement of Claim 2, and the variable resistor does not function as a variable gain amplifier, as the resistor value is fixed except where there is external intervention. Therefore Claim 2 is independently patentable as it is not taught or suggested by the cited references. Claims 7 and 11 recite a similar arrangement and are likewise patentable

As to Claims 3, 8, and 12, the apparatus of Sato is intended to convert photographic images taken with the APS (Advanced Photo System) system wherein information on the conditions under which the film photograph has been taken are encoded on the film outside of the image area (IX information) to aid in the preparation of images from the negatives. Many parameters can be recorded. The disclosure in Sato mentions only a very few of them. As background, to aid in the understanding these remarks regarding Sato, the Applicants append a copy of a magazine article outlining the APS system. (Applicants do not believe that the information in the article is material to the patentability of the present invention, but the article aids understanding

the terminology used by Sato.) On page 38 of the article, one can see that the "Rear (back) light" information is determined not by the absolute intensity of the illumination in the vicinity of the video camera of Sato's apparatus (which is imaging an image already photographed on film and then developed), but in the field of view of the film camera at the time the original film image was obtained, and as interpreted in accordance with Note 13: "The camera assumes there is backlighting if the central subject is darker than the background". Using this and the "Flash Fire" (see Note 10) some inference might be drawn regarding the conditions under which the photograph was taken at some time in the past (prior to photographic development of the film); but it is indirect, and acts on an previously recorded image which was obtained at a place different from the video camera of Sato's apparatus. The contrasts with arrangement of Applicants' Claim 3 where the black level of the image data produced from the output of a video camera is dependent on "the illuminance around a video camera that outputs said analog image signal."

Since Sato does not teach or suggest the arrangement of Claim 3, or of similar Claims 8 and 12, they are independently patentable.

Claims 4, 9 and 13 are dependent on claims 3, 8, and 12 respectively which the Applicants contend are patentable over the cited references, and as such are patentable. In addition, Claim 4 recites a "black-level setting mechanism [which] outputs a lower-level reference voltage corresponding to illuminance detected by said illuminance sensor." Tsujihara adds a BRT reference signal to the pedestal voltage level, during a vertical blanking interval (Fig. 5 (a,c)), an interval which does not correspond any portion of the waveform described as relevant to the arrangement of Claim 4, nor does it correspond to illuminance in the vicinity of the video camera. As such the arrangement of Claim 4 is not taught or suggested by Tsujihara and Claim 4 is independently patentable. Claims 9 and 13 recite similar arrangements and are likewise patentable.

As to amended Claim 5, in this instance the Examiner, citing Sato, has compared image data that would have been displayed (but was not), with a modified version of the same image data that is actually displayed. This is not the same thing as having digital image data, however modified, and blank data, both being displayed on a display in a manner that the person viewing the display perceives both images to be present simultaneously but separate from one another.

Since Sato does not teach or suggest the arrangement of Claim 5, it is independently patentable.

Claim 6 depends on Claim 5, which is patentable, but Claim 6 is also independently patentable. As discussed in conjunction with Claim 1, no data are displayed on the display during the vertical blanking period which is when the BRT signal is present. The BRT signal can only be used to control a characteristic of the entire display rather than separate areas thereof. The apparatus recited in Tsujihara is analog in its implementation, and does not use an A/D converter or a modification of the black level of the data to be displayed prior to combination with blank data having a separate and independent black level. Claim 6 recites an arrangement where there are two displayed areas, the black levels of each are independent of each other, and the black level of the image data is set by adjusting a voltage at the A/D converter. Thus Tsujihara does not teach or suggest the arrangement of Claim 6, which is therefore patentable.

The Applicants respectfully traverse the rejection of Claims 14-16. The Examiner states that "a blank area on a screen is a pixel and is separated from the rest of the display by lines." (Office action page 5 lines 2-4). The Applicants submit that the entire screen is comprised of a plurality of pixels, normally addressed in a sequential manner to create a scan line, with successive scan lines vertically displaced to form a perceived image. The pixels of the blank area of the display of Claims 14-16 are differentiated from those of the image area of the display by the data addressed to each specific pixel. In the case of the image area, the data corresponds to image data obtained by the

video camera, for example, while the data for the blank area corresponds to that generated by the blank data generator. The blanking marker, at the beginning and end of the image portion of the display area, is separately generated. To create a vertical line on the display as recited in Claims 14-16, a single pixel may be set to a white level, and pixels of successive horizontal scans arranged above one another such that a vertical white line is perceived by an observer. Once again, there are two separate areas actually displayed on the screen, a blank area and an image area, and the separately generated vertical white marker line is interposed between them. It does not correspond to the BRT signal as taught by Tsujihara since the BRT signal is not displayed; the BRT signal is present only during the vertical blanking interval, which occurs only once in each group of scan lines comprising an frame of displayed data, and the BRT signal has an effect on each pixel of the display. Since Tsujihara does not teach or suggest the arrangement of Claims 14-16, they are independently patentable.

In view of the clarifying amendments to the claims made and these remarks, the Applicants earnestly request the Examiner to withdraw the finality of the rejection and allow the amended claims.

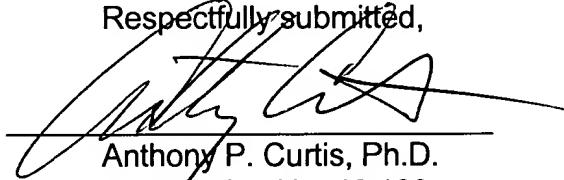
Conclusion

Claims 1-16 were pending. Claims 1 and 5-12 have been amended. Claims 1-16 remain pending. Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is Appendix A.

In view of the arguments presented and the claim amendments made in this response, Applicants respectfully request that the rejection of Claims 1-16 be withdrawn, and a timely notice of allowance issue.

The Examiner is respectfully requested to contact the undersigned in the event that a telephone interview would expedite consideration of the application.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Anthony P. Curtis', is written over a horizontal line.

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Appendix A

VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (Amended twice) An image display apparatus comprising:
a screen capable of displaying an image area and a blank area;
an A/D converter to convert an input analog image signal into digital image data;
a black level setting mechanism to set a first black level of the digital image data by adjusting a lower-limit reference voltage of the A/D converter;
a blank data generator to generate blank data to display from ~~a the~~ blank area around ~~an the~~ image display area ~~on a screen, the~~ a second black level of the blank area being independent of the first black level of the digital image data area;
an image data combiner to combine the blank data ~~generated by the blank data generation mechanism and the digital image data output from said A/D converter;~~
and
a display to display ~~an~~ an output of the image data combiner being displayed on said screen.

5. (Amended twice) A method of displaying an image comprising:
adjusting a first black level of digital image data such that ~~a the first~~ black level of the an digital image display data area is different from a second black level ~~of blank data~~ external to the image display area; and
displaying ~~an image from the the~~ digital image data in ~~the an~~ image display area and the blank data in a blank area of a display screen.

6. (Amended twice) The method of displaying an image according to claim 5, further comprising:
converting an input analog image signal into the digital image data;

adjusting a lower-limit reference voltage of the digital image data to
thereby adjusting the first black level of the digital image data;

generating the blank data ~~to for display in a~~ the blank area around ~~an the~~
image display area ~~on a screen~~ in which the second black level of the blank ~~area~~ data is
independent of the first black level of the digital image ~~display area~~ data;

combining the blank data ~~generated and~~ the digital image data ~~output~~; and

displaying the combination of the blank data ~~generated and~~ the digital
image data ~~output~~ on the screen.

7. (Amended) The method of displaying an image according to claim 6, the
adjusting the first black level comprising adjusting a variable resistor.

8. (Amended) The method of displaying an image according to claim 6, the
adjusting the first black level comprising detecting ~~the an~~ illuminance around a video
camera that outputs the analog image signal.

9. (Amended) The method of displaying an image according to claim ~~8~~9, further
comprising outputting a lower-limit reference voltage corresponding to the detected
illuminance.

10. (Amended twice) A method of displaying an image comprising:
converting an input analog image signal into digital image data;
adjusting a lower-limit reference voltage of the digital image data to
thereby ~~setting~~ a first black level of the digital image data;
generating blank data ~~to for display in~~ a blank area around an image
display area ~~on a screen~~ in which ~~at the~~ second black level of the blank data ~~area~~ is
independent of the first black level of the image display ~~area~~ data;
combining the blank data ~~generated and~~ the digital image data ~~output~~; and
displaying the combination of the blank data ~~generated and~~ the digital
image data ~~output~~ on ~~said a~~ screen.

11. (Amended) The method according to claim 10, the setting of the first black level comprising adjusting a variable resistor.

12. (Amended) The method according to claim 10, the setting of the first black level comprising detecting the an-illuminance around a video camera that outputs the analog image signal.